



## PATENT ABSTRACTS OF JAPAN

(11) Publication number: **09192218 A**(43) Date of publication of application: **29.07.1997**

(51) Int. Cl. **A61M 5/00**  
A61B 5/00

(21) Application number: **08004608**  
(22) Date of filing: **16.01.1996**

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(54) **BLOOD-SUGAR LEVEL CONTROL SYSTEM**

## (57) Abstract:

**PROBLEM TO BE SOLVED:** To continuously monitor a blood-sugar level noninvasively by providing an injection means and a liquid injection quantity control means in a device which directly irradiates the light on the living body and measures the living substance density based on a transmitted light, a scattered light, or a photoacoustic signal generated from the living body.

**SOLUTION:** A semiconductor laser 1 and a photo detector 2 are so installed that the both optic axes are coincided with each other and near infrared rays are directly irradiated on a sample (a living body) 3 inserted between them. The output of the photo detector 2 is input in a computer 7 via an amplifier 6 so that glucose

density (namely, the blood-sugar level) is calculated, and the result is displayed on a display 8 and at the same time stored in a storage device 9. Insulin feeding quantity is optimized according to the measured glucose density and after the signal based on the insulin quantity is input into a liquid injection quantity controller 10, a liquid injection device 11 is actuated so as to automatically inject insulin into the sample (the living body) 3 via a needle 12.

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